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**In the Drawings**

Please replace Figs. 3-6 with new Figs. 3-6 as shown on the Replacement Sheet submitted herewith.

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The Specification has been amended. The originally filed Drawings have been amended as shown on the Replacement sheet and replaced with formal Drawings. Claim 7 has been cancelled and claims 14-15, 22 and 24 have been withdrawn. Claims 25-28 has been added. Thus, claims 1-6, 8-13, 16-21, 23 and 25-28 are now pending. No new matter has been added. In view of the above amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

Claims 1-12, 16-21 and 23 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,461,321 to Quinn.

Claim 1 recites a distal tip for a catheter comprising "first and second lumens extending therethrough, wherein in an operative configuration, the first and second lumens are coupled to first and second lumens of a dual lumen catheter" in combination with "a first opening fluidly connected to the first lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid thereinto in a reverse mode of operation" and "a second opening fluidly connected to the second lumen, the second opening being disposed distally from the first opening and separated therefrom by a selected stagger distance for outflow of fluid therefrom when the catheter is in the normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation" along with "a contoured flow deflection element directing, in the reverse mode of operation, outflow from the first opening away from the second opening" and "a contoured outlet portion of the second opening reducing an outflow velocity therefrom in the normal mode of operation" and "side walls extending between the first opening and the bolus."

In contrast, Quinn describes a bolus 20 coupled to a distal end of a dual lumen catheter 10. The bolus 20 includes an arterial port 37 and a venous port 89 formed on opposite sides thereof. As shown clearly in Fig. 8, which is a cross-section of the bolus 20 at the opening of the arterial port 37, there are no side extensions or other structures formed adjacent thereto for preventing outflow from spilling radially around the bolus 20. That is, septum 58 is shown as flat along its entire length. Similarly, Fig. 10, which is a cross-section of the bolus 20 at the opening of the venous port 89, does not show any side extensions or similar structures for preventing outflow from spilling radially around the bolus 20. In fact, Fig. 10 appears to show sloped side edges 71 of the septum 58 which would induce outflow from the venous port 89 to

spill radially. Thus, it is respectfully submitted that Quinn neither discloses nor suggests "side walls extending between the first opening and the bolus," as recited in claim 1. Because claims 2-6 and 8-12 depend from, and therefore, include all of the limitations of claim 1, it is respectfully submitted that these claims are also allowable.

Claim 16 recites a flow control tip for a multi-lumen catheter comprising "an attachment portion adapted to fluidly connect to a distal portion of a catheter" in combination with "a contoured bolus defining at least a portion of an inlet and an outlet of the distal tip so that, when coupled to the catheter, the inlet is coupled to a first one of the catheters lumens and the outlet is coupled to a second one of the catheters lumens, and a flow deflector directing fluids exiting the inlet in a first mode away from the outlet and *side walls extending between the inlet and the bolus*, wherein the contoured bolus defines a specified stagger distance between the inlet and the outlet."

As stated above with reference to claim 1, Quinn neither discloses nor suggests "side walls extending between the first opening and the bolus." Thus, it is respectfully submitted that claim 16 is allowable at least for the reasons stated above with regard to claim 1. Because claims 17 - 21 and 23 depend from, and, therefore include all of the limitations of claim 16, it is respectfully submitted that these claims are also allowable.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Quinn in view of U.S. Patent No. 5,171,216 to Dasse et al. ("Dasse").

It is respectfully submitted that Dasse does not cure the above-described deficiencies of Quinn. As shown in Fig. 2B of Dasse, infusion and withdrawal ports 14 and 16 are simply formed in and flush with a side surface of a multi-lumen tube 2. Thus, there are no side extensions or other structures for preventing outflow from either of the ports 14, 16 from spilling radially around the tube 2. Thus, it is respectfully submitted that Dasse neither discloses nor suggests "side walls extending between the first opening and the bolus," as recited in claim 1. Therefore, because claim 13 depends from, and, therefore includes all of the limitations of claim 1, it is respectfully submitted that this claim is also allowable.

Claim 25 recites a distal tip for a multi-lumen catheter comprising "first and second lumens extending therethrough, wherein in an operative configuration, the first and second lumens are coupled to first and second lumens of the catheter" and "a first opening fluidly

connected to the first lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid thereinto in a reverse mode of operation" in combination with "a second opening fluidly connected to the second lumen, the second opening being disposed distally from the first opening and separated therefrom by a selected stagger distance for outflow of fluid therefrom when the catheter is in the normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation" and "an intermediate wall extending along a longitudinal axis of the distal tip and separating the first and second lumens thereof, wherein an extension portion of the intermediate wall extends beyond the first opening to the second opening" and *"a contoured bolus overmolded on the extension portion and including a contoured flow deflection element directing, in the reverse mode of operation, outflow from the first opening away from the second opening."*

In contrast, Quinn states that the bolus 20 is welded to a distal end of the catheter 10. In addition, Figs. 5, 13-14 and 16 show the bolus 20 as being integrally formed. Thus, it is respectfully submitted that Quinn neither discloses nor suggests *"a contoured bolus overmolded on the extension portion and including a contoured flow deflection element directing, in the reverse mode of operation, outflow from the first opening away from the second opening,"* as recited in claim 25.

Claim 26 recites a distal tip for a catheter comprising "first and second lumens extending therethrough, wherein in an operative configuration, the first and second lumens are coupled to first and second lumens of a dual lumen catheter" in combination with "a first opening fluidly connected to the first lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid thereinto in a reverse mode of operation" and "a second opening fluidly connected to the second lumen, the second opening being disposed distally from the first opening and separated therefrom by a selected stagger distance for outflow of fluid therefrom when the catheter is in the normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation" and having "an intermediate wall extending along a longitudinal axis of the distal tip and separating the first and second lumens from one another, wherein an extension portion of the intermediate wall extends beyond the first opening to the second opening" in combination with *"a longitudinal slit formed through the extension portion of the intermediate wall, sides of the slit separated from one another to form an expanded distal portion of the second lumen"* and *"a contoured bolus overmolded over the slit portion of the intermediate wall and the expanded extension portion of the second lumen and including a contoured flow deflection element directing, in the reverse*

*mode of operation, outflow from the first opening away from the second opening."*

In contrast, a distal end of the lumen 59B is molded to have a greater and more circular cross-section than a proximal portion thereof. Quinn, col. 7, ll. 53-57. Thus, it is respectfully submitted that Quinn neither discloses nor suggests *"a longitudinal slit formed through the extension portion of the intermediate wall, sides of the slit separated from one another to form an expanded distal portion of the second lumen"* and *"a contoured bolus overmolded over the slit portion of the intermediate wall and the expanded extension portion of the second lumen and including a contoured flow deflection element directing, in the reverse mode of operation, outflow from the first opening away from the second opening,"* as recited in claim 26. Thus, it is respectfully submitted that claim 26 is allowable.

Claim 27 recites a distal tip for a catheter comprising "first and second lumens extending therethrough, wherein in an operative configuration, the first and second lumens are coupled to first and second lumens of the catheter" in combination with "a first opening fluidly connected to the first lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid thereinto in a reverse mode of operation" and "a second opening fluidly connected to the second lumen, the second opening being disposed distally from the first opening and separated therefrom by a selected stagger distance for outflow of fluid therefrom when the catheter is in the normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation" and having "an intermediate wall extending along a longitudinal axis of the distal tip and separating the first and second lumens from one another, wherein an extension portion of the intermediate wall extends distally beyond the second opening" and *"a first projection mounted on a first side of the extension portion and directing outflow of the fluid from the first opening in the reverse mode of operation away from the extension portion, a proximal end of the first projection substantially aligned with the second opening and a distal end of the first projection proximal of a distal end of the extension portion."*

In contrast, Fig. 5 of Quinn shows that the nose section 57 is integrally formed with the bolus body 20. Thus, it is respectfully submitted that Quinn neither discloses nor suggests *"a first projection mounted on a first side of the extension portion,"* as recited in claim 27. Furthermore, the nose section 57 is the most distal portion of the bolus body 20. Thus, it is respectfully submitted that Quinn neither discloses nor suggests *"a distal end of the first projection proximal of a distal end of the extension portion,"* as recited in claim 27. Thus, it is respectfully submitted that claims 27 and 28, which depends therefrom, are allowable.

In light of the foregoing, Applicants respectfully submit that all of the pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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By 

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